

**Claims**

1. An electrode (35) for metal vapor-containing discharge lamps made from a high-melting, electrically conductive material, preferably from tungsten or a predominantly tungsten-containing material, comprising a shaft (36) and a pin-shaped head part (37), which defines a longitudinal axis L, characterized in that at least one hole (39) is arranged essentially transversely with respect to the longitudinal axis, in particular at an angle of 60 to 90° with respect to the longitudinal axis, in the region of the head part (37).
2. The electrode as claimed in claim 1, characterized in that the shaft and the head part have a uniform, predetermined diameter D for the pin.
3. The electrode as claimed in claim 1, characterized in that the head part has a diameter D2 which extends beyond that of the shaft.
4. The electrode as claimed in claim 1, characterized in that the hole is continuous or is in the form of a blind hole.
5. The electrode as claimed in claim 1, characterized in that the head part contains at most three holes.
6. The electrode as claimed in claim 1, characterized in that the diameter of the hole varies, the hole having a maximum diameter B.
7. The electrode as claimed in claim 6, characterized in that the maximum diameter is in each case approximately the same size in the case of a plurality of holes.
8. The electrode as claimed in claim 1, characterized in that the hole is linear.

9. The electrode as claimed in claim 1, characterized in that the plurality of holes lie in one plane.

10. The electrode as claimed in claim 9, characterized in that the plurality of holes are connected to one another.

11. The electrode as claimed in claim 4, characterized in that each blind hole has a depth of at least 50% of D.

12. The electrode as claimed in claim 1, characterized in that the tip (7) of the head part is rounded off.

13. The electrode as claimed in claim 1, characterized in that the distance between the hole (center of the hole) and the tip is denoted by A, the ratio A/D being in the range between 1 and 6 (end values inclusive).

14. The electrode as claimed in claim 1, characterized in that the ratio between the diameter B of the hole and the diameter D of the head part is between 0.05 and 0.3 (end values inclusive).

15. A lamp having at least one electrode as claimed in claim 1, the lamp having a discharge vessel which contains metal vapor, in particular mercury and/or sodium, the discharge vessel being produced from glass or ceramic.

16. A method for producing an electrode, in which the electrode has a pin-shaped head part having a longitudinal axis, characterized in that a hole is produced essentially transversely with respect to the longitudinal axis by short laser pulses of a maximum of 10  $\mu$ s in duration.

17. The method as claimed in claim 16, characterized in that the laser beam is focused.

18. The method as claimed in claim 16, characterized in that  
the rate of repetition of the pulses is at least 1 kHz.

5 19. The method as claimed in claim 17, characterized in that  
the energy density of the focused laser beam is above the  
energy density required for sublimation of the material of the  
electrode.